Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

1. (Original) A method for determining a vehicle trip on a roadway, the method comprising:

providing a plurality of vehicle detections from a plurality of gateways;

determining a maximum travel time between corresponding pairs of the plurality of gateways;

correlating corresponding pairs of the plurality of vehicle detections by determining that a travel time between each of the gateways of each of the corresponding pairs of detections is less than a corresponding maximum travel time;

determining a plurality of chainable detections; and

determining the boundaries of the trip.

2. (Original) The method of claim 1 wherein providing the plurality of vehicle detections comprises providing at least one license plate image corresponding to one of the plurality of vehicle detections.

3. (Original) The method of claim 2 further comprising:

determining a vehicle license plate number; and

processing the at least one license plate image for verifying the vehicle license plate number.

4. (Original) The method of claim 1 wherein providing the plurality of vehicle detections comprises filtering a plurality of vehicle transactions for providing the plurality of vehicle detections.

5. (Original) The method of claim 4 wherein the plurality of vehicle transactions includes at least one ambiguous transaction; and



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further comprising eliminating at least one ambiguous transaction from the plurality of vehicle transactions.

6. (Original) The method of claim 5 wherein the at least one ambiguous transaction includes a conflicting gateway crossing.

7. (Original) The method of claim 4 further comprising eliminating dual transactions from the plurality of vehicle detections.

8. (Original) The method of claim 1 wherein correlating the corresponding pair of the plurality of vehicle detections further comprises determining whether each of the pair of detections is provided by a corresponding pair of gateways that are disposed logically consistent with the roadway topology.

9. (Original) The method of claim 1 wherein correlating the corresponding pair of the plurality of vehicle detections further comprises determining that the travel time between each of the detections is greater than a minimum travel time.

10. (Original) The method of claim 1 wherein determining a maximum travel time comprises determining an incident free maximum travel time.

11. (Original) The method of claim 10 further comprising:

determining an expected travel time; and

determining that the maximum travel time is the longer of the expected travel time and the incident free maximum travel time.

12. (Original) The method of claim 11 further comprising:

detecting a traffic incident; and

modifying the expected travel time in response to the traffic incident.



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13. (Original) The method of claim 1 further comprising waiting for the plurality of chainable detections to be initially processed.

14. (Original) The method of claim 1 further comprising waiting for the plurality of chainable detections to be verified.

15. (Original) The method of claim 13 further comprising determining a latest time for the plurality of detections.

16. (Original) The method of claim 1 wherein determining the boundaries comprises detecting the end of the trip.

17. (Original) The method of claim 16 wherein detecting the end of the trip comprises:
determining a maximum detection time for the plurality of chainable detections;
determining a current boundary time;
comparing the current boundary time to the maximum detection time; and
declaring the end of the trip in response to determining that the current boundary time is greater than the maximum detection time.

18. (Original) The method of claim 1 wherein determining the boundaries comprises detecting the start of the trip.

19. (Original) The method of claim 1 further comprising forming the trip by chaining the plurality of chainable detections.

20. (Original) The method of claim 1 further comprising waiting for the plurality of chainable detections.

21. (Original) The method of claim 20 wherein waiting for all detections that might chain comprises:



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determining a first time wherein each of the plurality of chainable detections has a first extrapolation region terminating earlier than the first time.

22. (Original) The method of claim 21 further comprising:

determining a second time wherein each of the plurality of chainable detections occurring later than the first time has a second extrapolation region terminating earlier than the second time, is evaluated for verifying.

23. (Original) The method of claim 22 verifying transactions occurring between the first time interval and the second interval time using a video image of a license plate number captured at the time of the detection.

24. (Original) The method of claim 22 wherein verifying transactions comprises automatically recognizing the license plate number from the image.

25. (Original) The method of claim 22 wherein verifying transactions comprises manually reading the license plate number from the image.

26. (Original) The method of claim 1 wherein the plurality of vehicle transactions is provided by at least one of:

an enforcement gateway; and

a toll gateway sensor.

27. (Original) The method of claim 1 wherein each of the plurality of vehicle detections comprises:

a time of the detection; and

the location of the detection.



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28. (Original) The method of claim 1 wherein determining the boundaries of the trip comprises using at least one of:

a traffic incident; and

a set of billing policies.

29. (Original) A method for determining a vehicle trip on a roadway having a plurality of gateways disposed according to a roadway topology, the method comprising:

providing a model of the topology including gateway connectivity, a plurality of minimum travel times between pairs of gateways, and a plurality of incident free maximum travel times between pairs of gateways;

providing a plurality of vehicle detections;

providing a set of rules for applying the model;

correlating the plurality of vehicle detections by applying the rules to the plurality of vehicle detections; and

determining a plurality of chainable vehicle detections forming the trip.

30. (Original) The method of claim 29 further comprising determining a plurality of expected travel times between the pairs of gateways.

31. (Original) The method of claim 30 further comprising chaining the plurality of chainable vehicle detections for forming a potential trip.

32. (Original) The method of claim 31 further comprising verifying a license plate reading corresponding to at least one of the plurality of chainable vehicle detections.

33. (Original) The method of claim 32 further comprising waiting for required verification of at least one of the plurality of chainable vehicle detections in the potential trip; and

chaining the plurality of chainable vehicle detections to form the trip.

34. (Currently Amended A toll collection system comprising:



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a plurality of gateways;

a trip determination processor comprising:

a transaction processor;

a vehicle detection correlation processor coupled to the transaction processor and adapted to determine at least one of whether a travel time between pairs of gateways is less than a corresponding maximum travel time and whether a travel time between pairs of gateways is greater than a corresponding minimum travel time;

a transaction filter processor coupled to the vehicle detection correlation processor;

an end of a trip detection processor coupled to the transaction filter processor;

a start of a trip detection processor coupled to the transaction filter processor; and

a trip formation processor coupled to the transaction filter processor, the end of a trip detection processor, and the start of a trip detection processor.

35. (Original) The system of claim 34 wherein the plurality of gateway is adapted for an open ticket tolling system.

36. (Original) The system of claim 34 wherein the plurality of gateway is adapted for a closed ticket tolling system.

37. (Original) The system of claim 34 wherein the plurality of gateway is adapted for an open ticket enforcement system.

38. (Original) The system of claim 34 wherein the plurality of gateway is adapted for a mixed open ticket, closed ticket tolling system.



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